

From the INTERNATIONAL BUREAU

PCT

NOTIFICATION OF TRANSMITTAL
OF COPIES OF TRANSLATION
OF THE INTERNATIONAL PRELIMINARY REPORT
ON PATENTABILITY
(CHAPTER I OR CHAPTER II
OF THE PATENT COOPERATION TREATY)
(PCT Rules 44bis.3(c) and 72.2)

To:

HASEGAWA, Yoshiki
SOEI PATENT AND LAW FIRM, Ginza First Bldg., 10-6,
Ginza 1-chome, Chuo-ku, Tokyo
1040061
JAPON



Date of mailing (day/month/year) 26 May 2006 (26.05.2006)	
Applicant's or agent's file reference FP04-0165-00	IMPORTANT NOTIFICATION
International application No. PCT/JP2004/010411	International filing date (day/month/year) 22 July 2004 (22.07.2004)
Applicant HAMAMATSU PHOTONICS K.K. et al	

1. Transmittal of the translation to the applicant.



The International Bureau transmits herewith a copy of the English translation of the international preliminary report on patentability (Chapter I).



The International Bureau transmits herewith a copy of the English translation of the international preliminary report on patentability (Chapter II).

2. Transmittal of the copy of the translation to the designated or elected Offices.

The International Bureau notifies the applicant that copies of that translation have been transmitted to the following designated or elected Offices requiring such translation:

None

The following designated or elected Offices, having waived the requirement for such a transmittal at this time, will receive copies of that translation from the International Bureau only upon their request:

AE, AG, AL, AM, AP, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EA, EC, EE, EG, EP, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OA, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW

3. Reminder regarding translation into (one of) the official language(s) of the elected Office(s).

The applicant is reminded that, where a translation of the international application must be furnished to an elected Office, that translation must contain a translation of any annexes to the international preliminary report on patentability (Chapter II).

It is the applicant's responsibility to prepare and furnish such translation directly to each elected Office concerned within the applicable time limit (Rule 74.1). See Volume II of the PCT Applicant's Guide for further details.

The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland	Authorized officer Yoshiko Kuwahara
Facsimile No.+41 22 740 14 35	Facsimile No.+41 22 338 90 90



PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter I of the Patent Cooperation Treaty)

(PCT Rule 44bis)

Applicant's or agent's file reference FP04-0165-00	FOR FURTHER ACTION		See item 4 below
International application No. PCT/JP2004/010411	International filing date (<i>day/month/year</i>) 22 July 2004 (22.07.2004)	Priority date (<i>day/month/year</i>) 29 July 2003 (29.07.2003)	
International Patent Classification (8th edition unless older edition indicated) See relevant information in Form PCT/ISA/237			
Applicant HAMAMATSU PHOTONICS K.K.			

1.	This international preliminary report on patentability (Chapter I) is issued by the International Bureau on behalf of the International Searching Authority under Rule 44 <i>bis</i> .1(a).																								
2.	This REPORT consists of a total of 5 sheets, including this cover sheet.																								
In the attached sheets, any reference to the written opinion of the International Searching Authority should be read as a reference to the international preliminary report on patentability (Chapter I) instead.																									
3.	<p>This report contains indications relating to the following items:</p> <table style="width: 100%;"> <tr> <td style="width: 10%; text-align: center;"><input checked="" type="checkbox"/></td> <td style="width: 30%;">Box No. I</td> <td style="width: 60%;">Basis of the report</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td>Box No. II</td> <td>Priority</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td>Box No. III</td> <td>Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td>Box No. IV</td> <td>Lack of unity of invention</td> </tr> <tr> <td style="text-align: center;"><input checked="" type="checkbox"/></td> <td>Box No. V</td> <td>Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td>Box No. VI</td> <td>Certain documents cited</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td>Box No. VII</td> <td>Certain defects in the international application</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td>Box No. VIII</td> <td>Certain observations on the international application</td> </tr> </table>	<input checked="" type="checkbox"/>	Box No. I	Basis of the report	<input type="checkbox"/>	Box No. II	Priority	<input type="checkbox"/>	Box No. III	Non-establishment of opinion with regard to novelty, inventive step and industrial applicability	<input type="checkbox"/>	Box No. IV	Lack of unity of invention	<input checked="" type="checkbox"/>	Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement	<input type="checkbox"/>	Box No. VI	Certain documents cited	<input type="checkbox"/>	Box No. VII	Certain defects in the international application	<input type="checkbox"/>	Box No. VIII	Certain observations on the international application
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<input type="checkbox"/>	Box No. VIII	Certain observations on the international application																							
4.	The International Bureau will communicate this report to designated Offices in accordance with Rules 44bis.3(c) and 93bis.1 but not, except where the applicant makes an express request under Article 23(2), before the expiration of 30 months from the priority date (Rule 44bis .2).																								

The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland Facsimile No. +41 22 740 14 35	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="padding: 5px;">Date of issuance of this report 15 May 2006 (15.05.2006)</td> </tr> <tr> <td style="padding: 5px;">Authorized officer Yoshiko Kuwahara</td> </tr> <tr> <td style="padding: 5px;">Telephone No. +41 22 338 90 90</td> </tr> </table>	Date of issuance of this report 15 May 2006 (15.05.2006)	Authorized officer Yoshiko Kuwahara	Telephone No. +41 22 338 90 90
Date of issuance of this report 15 May 2006 (15.05.2006)				
Authorized officer Yoshiko Kuwahara				
Telephone No. +41 22 338 90 90				

PATENT COOPERATION TREATY

TRANSLATION

From the
INTERNATIONAL SEARCHING AUTHORITY

PCT

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43bis.1)

To:

Date of mailing
(day/month/year)

Applicant's or agent's file reference

FP04-0165-00

FOR FURTHER ACTION

See paragraph 2 below

International application No.

PCT/JP2004/010411

International filing date (day/month/year)

22.07.2004

Priority date (day/month/year)

29.07.2003

International Patent Classification (IPC) or both national classification and IPC

Applicant

HAMAMATSU PHOTONICS K.K.

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☐ Box No. VIII Certain observations on the international application

2. **FURTHER ACTION**

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA/IP

Authorized officer

Facsimile No.

Telephone No.

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

International application No.

PCT/JP2004/010411

Box No. I Basis of this opinion

1. With regard to the language, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.
☐ This opinion has been established on the basis of a translation from the original language into the following language
_____, which is the language of a translation furnished for the purposes of international search (under Rule 12.3 and 23.1(b)).
2. With regard to any nucleotide and/or amino acid sequence disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:
 - a. type of material
☐ a sequence listing
☐ table(s) related to the sequence listing
 - b. format of material
☐ in written format
☐ in computer readable form
 - c. time of filing/furnishing
☐ contained in the international application as filed.
☐ filed together with the international application in computer readable form.
☐ furnished subsequently to this Authority for the purposes of search.
3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table(s) relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
4. Additional comments:

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.

PCT/JP2004/010411

Box No. V	Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement		
1. Statement			
Novelty (N)	Claims	1-8	YES
	Claims		NO
Inventive step (IS)	Claims		YES
	Claims	1-8	NO
Industrial applicability (IA)	Claims	1-8	YES
	Claims		NO
2. Citations and explanations:			
<p>The following documents are all cited in the ISR.</p> <p>Document 1: WO 96/36999 A1 (Dr. Johannes Heidenhain GmbH), 09 May 1996 Document 2: JP 2000-299489 A (Hamamatsu Photonics K.K.), 24 October 2000 Document 3: JP 2002-319669 A (Hamamatsu Photonics K.K.), 31 October 2002 Document 4: JP 2-185070 A (Matsushita Electric Industrial Co., Ltd.), 19 July 1990 Document 5: WO 97/23897 A2 (Dr. Johannes Heidenhain GmbH), 20 December 1997 Document 6: JP 8-111542 A (Seiko Instruments Inc.), 30 April 1996 Document 7: JP 5-136261 A (Kawasaki Steel Corporation), 01 June 1993 Document 8: JP 8-293476 A (Hitachi, Ltd.), 05 November 1996</p> <p>- Regarding claims 1 and 2</p> <p>The inventions described in claims 1 and 2 do not appear to involve an inventive step based on documents 4 through 6. Filling a translucent material in a recessed portion is indicated in document 5 (Fig. 5), and using a well-known resin as a filling material is an obvious matter. Also, configuring a filling material using a plurality of layers in accordance with necessary properties is indicated in document 4, and bonding a window plate to improve mechanical strength is indicated in cited document 6 (Fig. 9). Collecting such technologies to configure the inventions described in claims 1 and 2 could be easily conceived of by a party skilled in the art.</p> <p>- Regarding claims 3 and 4</p> <p>The inventions described in claims 3 and 4 do not appear to involve an inventive step based on documents 3 through 6. Document 3 (Figs. 1 and 4) indicates forming a resin film on a surface opposite an illuminated side and forming a filler electrode that penetrates the resin film.</p> <p>- Regarding claim 5</p> <p>The invention described in claim 5 does not appear to involve an inventive step based on documents 3 through 8. As indicated in documents 7 and 8, for dicing a semiconductor device, providing an opening at an intersection of dicing lines in advance to form a shape so that each diced portion is cut away is a well-known art.</p>			

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

International application No.

PCT/JP2004/010411

Supplemental Box

In case the space in any of the preceding boxes is not sufficient.

Continuation of: Box V

- Regarding claims 6-8

The inventions described in claims 4-6 do not appear to involve an inventive step based on documents 2 through 8. Document 2 (paragraphs 0009-0011 and 0018-0019) describes setting a high impurity concentration of a bottom surface of a recessed portion, an entire illuminated side surface of a substrate, and an entire lateral surface of a substrate.